

CLAIM AMENDMENTS

Claims 21, 23, 25, 26, 33, 57-61, 63, 70-71 remain in the application. Claims 21, 23, 25, 26 have been amended. Claims 1-20, 22, 24, 27-32, 34-56, 62, 64-69 have been canceled. Claims 70-71 have been added.

Listing of the Claims:

1-20. (Cancelled)

21. (Currently Amended) An apparatus comprising:
a plurality of network elements;
a plurality of spans interconnecting said plurality of network elements to form a ring, each of said plurality of spans having two sub-spans on which traffic travels in opposite directions;
a multiplexing ring transport network protocol operating on said ring providing a plurality of channels on each of said sub-spans, each of said plurality of channels includes a set of working channels and a mutually exclusive set of protecting channels, wherein a first connection configuration programmed on a first ~~of said sets~~ set of channels is not the same as a second connection configuration programmed on a second ~~of said sets~~ set of channels because ~~they~~ the first and second connection configurations identify one or more different concatenations of two or more components of said first and second sets of channels, where each of the concatenations of components carries data for a single circuit with a bandwidth greater than that of data carried by a single component, wherein said first set of channels and said second set of channels are respectively the set of working channels and the set of protecting channels on a same one of said

sub-spans, wherein the same connection configuration must be programmed on each of said sets of working channels on which traffic travels in the same direction as said first set of channels, and wherein a third connection configuration is programmed on each of said sets of working channels on which traffic travels in the opposite direction as first set of channels, and wherein said first and third connection configurations differ.

22. (Canceled)

23. (Currently Amended) The apparatus of claim 22~~1~~, wherein the same connection configuration must be programmed on each of said sets of working channels.

24. (Cancelled)

25. (Currently Amended) The apparatus of claim 22~~1~~, wherein the same connection configurations must be programmed on the set of working channels of both sub-spans of any given one of said spans, and wherein the connection configurations programmed on the sets of working channels of two different ones of said spans are not same.

26. (Currently Amended) The apparatus of claim 22~~1~~, wherein the connection configurations programmed on the sets of working channels of two different ones of said spans differ, and wherein the connection configurations programmed on the set of working channels of each of the sub-spans of at least one of said are not same.

27-32 (Cancelled)

33. (Original) The apparatus of claim 21, wherein said multiplexing ring transport protocol is a bi-directional line switched ring protocol.

34-56 (Cancelled)

57. (Previously Presented) A machine-readable medium providing instructions that, when executed by a set of one or more processors, cause said set of processor to perform operations comprising:

receiving, at a node of a ring network, a first message indicating a protection switch, wherein said ring network operates on a plurality of network elements that participate as nodes of said ring network and that are connected by a plurality of spans to form a ring, each span including two sub-spans on which traffic travels in opposite directions on a plurality of channels, said plurality of channels in each direction including a set of working channels and a set of protecting channels; and
responsive to said first message, reprogramming a receiving side of a first port of said node coupled to one of said sub-spans so that its protecting channels have programmed thereon the connection configuration of the working channels programmed on the opposite direction sub-span of a span identified by said first message, wherein said reprogramming also includes reprogramming a receiving side of a second port of said node coupled to the other direction sub-span of the ring relative to said first port, so that the protecting channels on that sub-span have programmed thereon the connection configuration of the working channels programmed on the opposite direction sub-span of the span identified by said first

message.

58. (Original) The machine-readable medium of claim 57, wherein said operations further comprise:

selecting from a storage of the connection configurations of the working channels of each of said plurality of spans the connection configuration used for said reprogramming.

59. (Original) The machine-readable medium of claim 57, wherein said operations further comprise:

storing, prior to said receiving, the connection configurations of the working channels of each of the spans not directly connected to said node.

60. (Original) The machine-readable medium of claim 59, wherein said operations further comprise:

receiving, prior to said storing, from said plurality of network elements said connection configurations.

61. (Original) The machine-readable medium of claim 57, wherein said operations further comprise:

receiving, at said node, a second message indicating a protection un-switch; and responsive to said second message, reprogramming said receiving side of said first port to its state prior to the protection switch.

62. (Canceled)

63. (Original) The method of claim 57, wherein said ring network is a BLSR ring.

64-69 (Cancelled)

70. (New) An apparatus comprising:
- a plurality of network elements;
 - a plurality of spans interconnecting said plurality of network elements to form a ring, each of said plurality of spans having two sub-spans on which traffic travels in opposite directions;
 - a multiplexing ring transport network protocol operating on said ring providing a plurality of channels on each of said sub-spans, each of said plurality of channels includes a set of working channels and a mutually exclusive set of protecting channels, wherein a first connection configuration programmed on a first set of channels is not the same as a second connection configuration programmed on a second set of channels because the first and second connection configurations identify one or more different concatenations of two or more components of said first and second sets of channels, where each of the concatenations of components carries data for a single circuit with a bandwidth greater than that of data carried by a single component, wherein said first set of channels and said second set of channels are the sets of working channels on two different ones of said sub-spans, wherein said two different ones of said sub-spans are part of a same one of said spans, and wherein a third connection configuration is programmed on the set of working channels of a sub-span of a different one of said spans, and wherein said third connection configuration is not the same as said first connection configuration.

71. (New) The apparatus of claim 70, wherein said multiplexing ring transport protocol is a bi-directional line switched ring protocol.